

who would have thought a fastener
could be so sure of itself . . .
that simple finger torque
locks it . . .
even against severe vibration

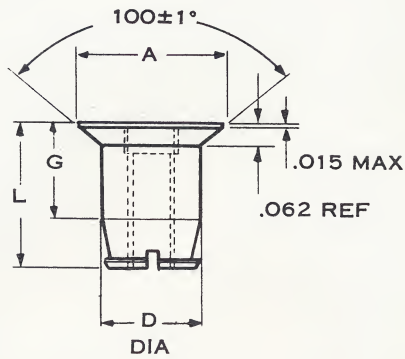


"click" . . . in for good

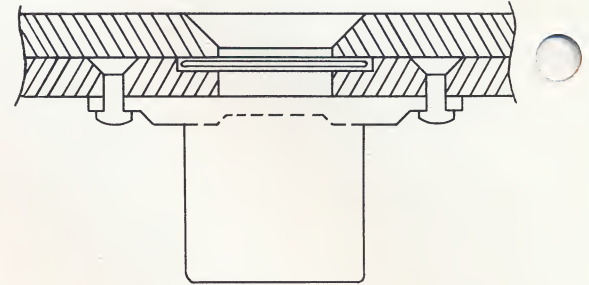
it's the Live-Lock by

calfax inc.

FLUSH HEAD STUD NUT

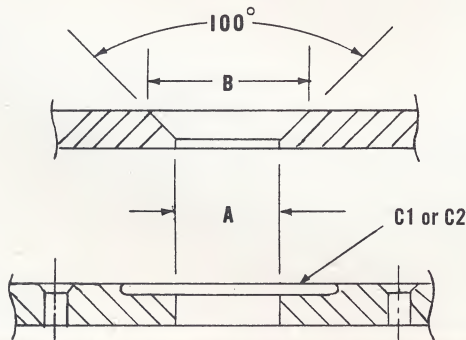


TYPICAL FLUSH HEAD INSTALLATION



Stud Nut P/N		Basic Thread	G Grip	Hex recess	'A' Dim. Theoretic	'D' Dia.	Receptacle P/N		Retaining Ring		Weight lbs./C	
Dble. Ld.	Quad. Ld.						Dble. Ld.	Quad. Ld.	Open	Caged	Stud	Recpt.
CA1720-1	CA1721-1	10-32	.180 .250	3/16	.520	.3745 .3730	CA1710 CA1736	CA1711	CA1727	CA1727-2	.985	2.58
-2	-2	↑	.251 .343	↑	max. sharp	max min.	↑	↑	↑	↑	1.20	↑
-3	-3	↓	.344 .437	↓	↓	.3745 .3730	CA1710 CA1736	↓	↓	↓	1.42	↓
-4	-4	10-32	.438 .531	3/16	.520				CA1727	CA1727-2	1.65	2.58
	CA1820-1	8-32	.156 .250	5/32	.399	.249 .247		CA1810	CA1825	CA1826-1	.352	1.43
	-2	↑	.251 .343	↑	max. sharp	max min.		↑	↑	↑	.441	↑
	-3	↓	.344 .437	↓	↓	.249 .247		↓	↓	↓	.532	↓
	-4	8-32	.438 .531	5/32	.399			CA1810	CA1825	CA1826-1	.624	1.43
CA2020-0		4-40	.065 .124	3/32	.342	.186 .184	CA2010		CA2025		.18	0.5
-1		↑	.125 .187	↑	↑	max min.	↑		↑		.20	↑
-2		↓	.188 .250	↓	max. sharp	↓	↓		↓		.23	↓
-3		4-40	.251 .312	3/32	.342	.186 .184	CA2010		CA2025		.26	↓
-4			.313 .375								.30	0.5

*Addition of suffix "T.S." changes standard Hex Socket recess to Torq-Set recess.



Series	A	B	RETAINING RING		Rivet Spacing ±.002	Rivet Hole Dia
			Open Type C1	Caged Type C2		
CA1700	.380 +.005 -.000	.525 ±.003	.625 Min. Dia. .025 Min. Depth	.656 Min. Dia. .055 Min. Depth	.785	.098
CA1800	.250 +.005 -.000	.406 ±.003	.437 Min. Dia. .025 Min. Depth	.468 Min. Dia. .045 Min. Depth	.687	.098
CA2000	.187 +.002 -.000	.337 ±.002	.281 Min. Dia. .025 Min. Depth		.437	.066

ENGINEERING DATA

CALFAX RECOMMENDED TIGHTENING TORQUES

CA1700 Series 30-in. lbs.

CA1800 Series 25-in. lbs.

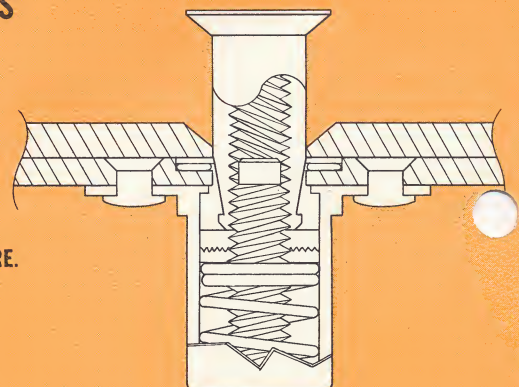
CA2000 Series 15-in. lbs.

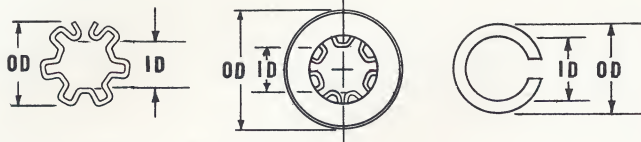
CALFAX RECOMMENDED MAXIMUM OPERATING TEMPERATURES
700°F (retaining ring is limiting factor)

CONTACT CALFAX FOR A-286 DESIGN FOR HIGHER TEMPERATURE.

All material in Stud Nuts 300 Series cres per MIL-S7720.

All material in Receptacle Assems 300 Series cres per MIL-S7720
except for Receptacle Screw which is A.286 (AMS 5735) and Heat Treated
Stainless Ratchet Components.



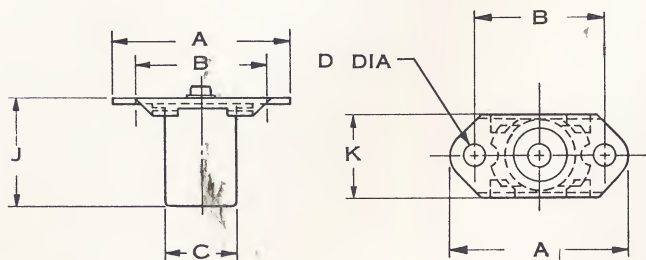


*Caged Type Retainer

Material: Ring — 17-7PH stainless steel. AMS 5528 **Elgiloy
Cage — 18-8 Type 300 Stainless Steel per MIL-S-7720

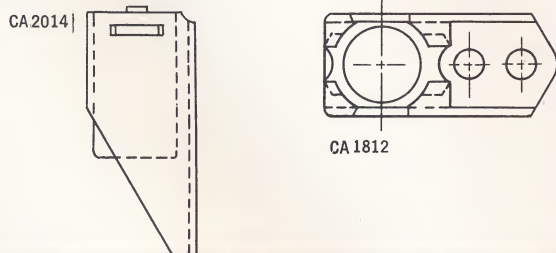
Ret. Ring # Style	Thickness	I.D.	O.D.
CA1727 (open) *	.025	.272	.485
CA1727-2 (caged) *	.050	.275	.625
CA1825 (open) **	.022	.187	.360
CA1826-1 (caged) **	.040	.187	.450
CA2025 (open) *	.025	.170	.220

Min. weight & envelope wire form retaining ring is available in CA1700 & CA1800 series. The caged ring, being supported by sheet metal wrapper, naturally offers a more rugged device; this style is imperative when being used with RF shielding or similar gasket material. The split washer ring, CA2025, provides a simple, positive ring with min. weight & envelope.

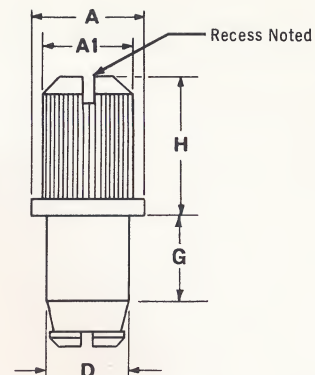


Recept. P/N		Float	A	B	C	D	J	K
Dble. Ld.	Quad. Ld.							
CA1710	CA1711	.06	1 1/8	.875	.54	.098	.585	5/8
	CA1810	.06	15/16	.687	3/8	.098	9/16	7/16
CA2010		.04	19/32	.437	9/32	.066	7/16	.33

Special receptacles are also available: CA1812, one lug version; CA2014, right angle mounting; and, CA1736, special narrow design providing .040 float with 'K' dimension of .575.



KNURLED PROTRUDING HEAD STUD NUT



Stud Nut P/N		Grip	Recess	A	A1	H	D	Use with Recept.		Ret. Ring P/N	
Dble. Ld.	Quad. Ld.							Dble. Ld.	Quad. Ld.	Open	Caged
CA1740-0	CA1728-0	.093 .156 .157 .250	Slot	1/2	3/8	9/16	.3745 .3730	CA1710 CA1736	CA1711	CA1727	CA1727-2
-1	-1	.251 .343					max. min.				
-2	-2	.344 .437									
-3	-3	.438 .531									
-4	-4						.3745 .3730	CA1710 CA1736	CA1711	CA1727	CA1727-2
	CA1828-0 CA1829-0	.093 .156 .157 .256 .251 .343 .344 .437 .438 .531	Slot H.S.	3/8	5/16	7/16	249 247		CA1810	CA1825	CA1826-1
	-1	.256					max. min.				
	-2	.251 .343									
	-3	.344 .437									
	-4	.438 .531					.249 .247		CA1810	CA1825	CA1826-1
CA2024-0		.062 .124 .125 .187 .188 .256 .251 .312 .313 .375	Slot	1/4	7/32	3/8	.186 .184	CA2010		CA2025	
-1							max. min.				
-2											
-3											
-4							.186 .184	CA2010		CA2025	

Series	A	RETAINING RING		Rivet Spacing ±.002	Rivet Hole Dia.
		Open Type C1	Caged Type C2		
CA1700	.380 +.005 -.000	.625 Min. Dia. .025 Min. Depth	.656 Min. Dia. .055 Min. Depth	.785	.098
CA1800	.250 +.005 -.000	.437 Min. Dia. .025 Min. Depth	.468 Min. Dia. .045 Min. Depth	.687	.098
CA2000	.187 +.005 -.000	.281 Min. Dia. .025 Min. Depth		.437	.066

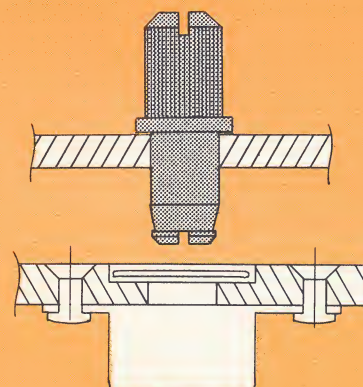
ULTIMATE TENSILE STRENGTH

CA1700	3000 LB MIN.
CA1800	1400 LB MIN.
CA2000	700 LB MIN.

ULTIMATE SINGLE SHEAR

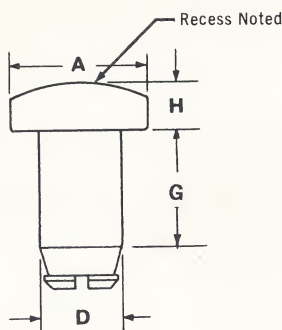
CA1700	5500 LB MIN.
CA1800	2500 LB MIN.
CA2000	1100 LB MIN.

Data applies for standard components only.



TYPICAL PROTRUDING HEAD INSTALLATION

PAN HEAD STUD NUT



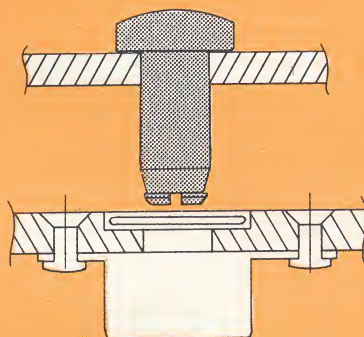
Stud Nut P/N		G	Re-	max.	max.	'D'	Use with Recept.		Ret. Ring P/N		Wt.
Dbie. Ld.	Quad. Ld.	Grip	cess	A	H	Dia.	Dbie. Ld.	Quad. Ld.	Open	Caged	+
CA1738-0	CA1722-0	.093	T.S.	.615	7/32	.3735	CA1710	CA1711	CA1727-2	CA1727-2	1.80
CA1739-0	CA1733-0	.156	H.S.			.3745	CA1736				2.10
-1	-1	.157				↑	↑	↑	↑	↑	2.37
-2	-2	.250				max.	↑	↑	↑	↑	2.60
-3	-3	.251				min.	↑	↑	↑	↑	2.91
-4	-4	.343				↓	CA1710	CA1711	CA1727-2	CA1727-2	
		.344				↓	CA1736				
		.437				↓					
		.438				↓					
		.531				↓					
	CA1824-0	.093	H.S.	.373	9/64	.249		CA1810	CA1825	CA1826-1	.40
		.156				.247		↑	↑	↑	.48
	-1	.157				↑		↑	↑	↑	.56
	-2	.250				max.		↑	↑	↑	.64
	-3	.251				min.		↑	↑	↑	.72
	-4	.343				↓		↑	↑	↑	
		.344				↓		↑	↑	↑	
		.437				↓		↑	↑	↑	
		.438				↓		↑	↑	↑	
		.531				↓		↑	↑	↑	
CA2022-0		.090	H.S.	.270	7/64	.186	CA2010		CA2025		.22
		.124				.184	↑	↑	↑	↑	.26
-1		.125				↑	↑	↑	↑	↑	.30
-2		.187				max.	↑	↑	↑	↑	.34
-3		.188				min.	↑	↑	↑	↑	.38
-4		.250				↓	CA2010		CA2025		
		.251				↓					
		.312				↓					
		.313				↓					
		.375				↓					

T.S. = TORQ-SET® a registered trademark of Phillips International Company, Natick, Mass.

H.S. = HEX SOCKET RECESS

Series	A	RETAINING RING		Rivet Spacing ±.002	Rivet Hole Dia.
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CA1800	.250 +.005 -.000	.437 Min. Dia. .025 Min. Depth	.468 Min. Dia. .045 Min. Depth	.687	.098
CA2000	.187 +.005 -.000	.281 Min. Dia. .025 Min. Depth		.437	.066

+Wt. = lbs/100 pcs



TYPICAL PAN HEAD INSTALLATION

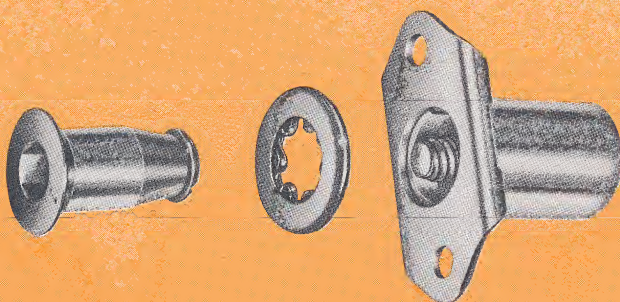
THE CALFAX LIVE-LOCK* FASTENER PROVIDES QUICK, SIMPLE, POSITIVE LOCKING ACTION!

These features not available in other fasteners

- Assembly and locking requires only light finger torque
- Spring loaded detent provides positive locking action
- Has passed severe vibration tests . . . data on request
- Stud nut taper provides proper entry and lead-in to accommodate misalignment
- Multiple lead thread assures rapid installation and removal
- Hex socket recess withstands high torque without camming out
- Receptacle provides full .03 float in any direction. (.02 for CA2000)
- Available in 3/16", 1/4" and 3/8" nominal stud diameters
- All stainless steel components provide optimum corrosion resistance, excellent finish, high-temperature characteristics, and non-magnetic properties.

This is an exploded view of the Live-Lock fasteners . . . stud nut, retaining ring, receptacle assembly.

* T. M. CALFAX, INC.



Stud Nut

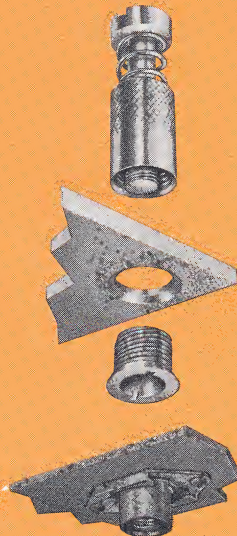
Retaining Ring

Receptacle Assembly

here are more CALFAX designs for unique applications

the Captive Screw

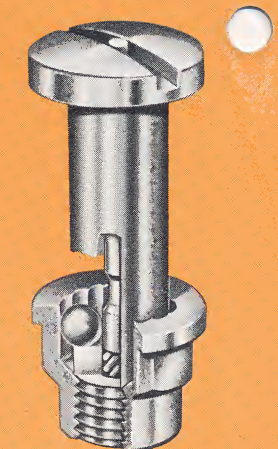
Fully retractable captive fastener mates rigidly with any standard nut plate or tapped hole without special tools. Retracts flush on mating surface in the unlocked position. Stock thread sizes, 2-56 through 1/4-28. Choice of slotted, hex, Phillips, Torq-Set*, and hex socket recesses. All parts non-magnetic stainless.



patented

the BOYDBOLT** fastener system

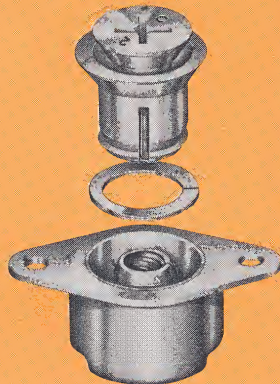
Here is a fastener that can be unlocked only by your deliberate attempt. No loose, extra pieces are required. Ten locking positions, not 6, to eliminate loss of preload. Eliminates castellated nuts, cotter pins, safety wires and so forth. Used on a clevis joint, or similar application, this bolt won't fall out EVEN IF NUT IS REMOVED. Reusable indefinitely. Available in 10-32 and larger sizes, optional materials and driving recesses.



patented

the +QR fastener

High-strength Quick Release fastener has positive-locking feature derived from reliable prevailing torque. Lightest weight fastener of its class. Features: .07 grip range per screw-length, plus full .125 sheet pull-up; quick operating; quadruple lead thread; low silhouette. New model meets MIL-F-22978.



patented

front panel fastener

This plus-flush captive fastener combines a decorative touch with its extremely functional operation, making it ideal for electronic panels, etc. It's a stainless steel, non-magnetic, simple swage assembly with a large bearing area for screw head. Comes in #6, #8, #10 and 1/4" thread sizes. Optionals: quad lead threads, special head styles, retaining ring installation.



patented

CALFAX SPECIALIZES IN FASTENER PROBLEMS . . . what are yours?

The items shown in this folder are merely representative; many other products are also available. In the event that no stock item exactly meets your need, Calfax specialists will be pleased to work with you in the design of fasteners to solve your problems — to meet your rigid requirements. Write or call Calfax today. You can shorten your own R&D by doing so.

†REG. T.M. ILLINOIS TOOL WORKS *REG. T.M. PHILLIPS INTERNATIONAL COMPANY ** T. M. CALFAX INC.

Fasteners in this folder are manufactured under one or more of the following patents, or patents pending: 3,059,736; 2,922,211; 3,037,542. 2,906,311; 3,141,487



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